Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Unlicensed Use of the 6 GHz Band	)	ET Docket No. 18-295
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183

PETITION FOR STAY PENDING JUDICIAL REVIEW

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Edison Electric Institute ("EEI") hereby requests that the Commission stay, pending judicial review, the rules permitting unlicensed operation of indoor devices in the 6 GHz band that were adopted on April 23, 2020, in the *Report and Order and Further Notice of Proposed Rulemaking* ("*Order*") in the above-captioned proceeding.[1] EEI has challenged the *Order*'s authorization of indoor devices to operate unlicensed in the 6 GHz band in the United States Court of Appeals for the D.C. Circuit.[2] Other parties have done the same,[3] and EEI anticipates that those challenges will be consolidated by the Court. While EEI and others pursue their challenges and pending judicial review, EEI hereby requests that the Commission grant a stay of the *Order's* rules permitting unlicensed indoor device operation, thereby preventing irreparable harm to EEI's members who rely on their licensed use of the 6 GHz band for essential operations. Absent immediate relief, millions of untraceable, unrecallable unlicensed devices

[1] Report and Order and Further Notice of Proposed Rulemaking, *Unlicensed Use of the 6 GHz Band; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, FCC 20-51, ET Docket No. 18-295, GN Docket No. 17-183 (released Apr. 24, 2020) ("*Order*"). A summary of the *Order*, along with the new regulations promulgated with the *Order*, was published in the Federal Register on May 26, 2020. *See* 85 Fed. Reg. 31390.

[2] Petition for Review, *Edison Electric Institute. v. F.C.C.*, No. 20-1216 (D.C. Cir. filed 17, 2020).

[3] Petition for Review, *AT&T Services, Inc. v. F.C.C.*, No. 20-1190 (D.C. Cir. filed June 5, 2020).

will be deployed with great potential to render mission critical incumbent licensed use inoperable.[4]

INTRODUCTION

As explained below, a stay is warranted pursuant to the legal principles governing such requests. We detail the very serious harm to public safety and critical infrastructure should the rules go into effect, thereby allowing unlicensed devices to be sold to consumers and put into use. This harm is real and not based on theory, speculation or conjecture. The attached declarations of Coy Trosclair on behalf of Southern Company and Michael V. Kuberski on behalf of Exelon Corporation spell out precisely how and why EEI's electric company members use their licensed fixed microwave facilities to protect and maintain critical infrastructure operations. The declarations also detail the immediate and accelerating harm that will ensue should these unlicensed and unregulated indoor devices be deployed under the new rules. Because the Commission's action to permit indoor use of unlicensed devices fails to provide incumbent users any protection against harmful interference once the multitude of indoor devices are deployed, and fails to provide any process to mitigate such interference could it even be possible to be identified, the Commission's action is without precedent, contrary to law, arbitrary and capricious, and EEI will succeed on the merits at the Court of Appeals.

Critically, the Commission's rules permitting unlicensed devices for indoor use fail to require device modification to incorporate harm mitigation technology as well as premarket

[4]At this juncture EEI is challenging only the rules permitting unlicensed indoor device operation in the 6 GHz band. It has been asserted that the remainder of the *Order* is not yet final. Rather than engage this side issue, EEI has elected to seek a limited stay of that portion of the *Order* where finality is not disputed. EEI reserves any and all subsequent challenges to other portions of the *Order* should they become ripe for review. *Cf. United States Telecom Ass'n v. F.C.C.*, 359 F.3d 554, 594 (2004) (reviewing portions of agency orders while finding other portions to be unripe for review); *Am. Civil Liberties Union v. F.C.C.*, 823 F.2d 1554, 1575 (D.C. Cir. 1987) (same).

testing to assess and identify harm remediation measures. As a result, the *Order* will cause immediate harm to EEI's members that rely on their incumbent licenses in the 6 GHz band for essential operations. This imminent and irreparable harm documented in the attached declarations, as well as the balance of harms and public interest concerns, necessitate that the Commission immediately act on this Petition. EEI intends to treat prolonged inaction as a denial and seek stay relief directly from the D.C. Circuit.

BACKGROUND

EEI is a trade association that represents U.S. investor-owned electric generation and distribution companies, including all the major regional electric utilities. Collectively, EEI's members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia and directly and indirectly employ more than seven million people in communities across the United States. Electric companies are among the nation's largest users of communications services and operate some of the most extensive private communications networks. They and their customers will be harmed by the Commission's new rules permitting unfettered and untraceable unlicensed operation of indoor devices operating in the 6 GHz band.

Given the importance of our national electric grid, and the critical need for grid resiliency and timely disaster management, robust interference protection for wireless networks is vital. As explained below and in the attached declarations from EEI members, existing 6 GHz wireless stations and networks are key components protecting the integrity of our members' electric distribution and transmission facilities. Electric companies primarily use 6 GHz band links for teleprotection, a relay system integrated into electric transmission and distribution grids that acts to prevent faults from escalating and possibly damaging essential elements of the electric distribution grid and/or causing power outages. Teleprotection systems must operate full-time

and in milliseconds to execute their functions properly. Reliable electricity is the life blood of the U.S. economy. As we have learned from natural disasters that cause outages, loss of reliable electricity threatens both the economic and physical wellbeing of the customers served by EEI members.

The *Order* establishes new rules for the sharing of the 6 GHz band by authorizing unlicensed indoor low power devices without any Automated Frequency Coordination ("AFC") system or other pre-deployment coordination mechanism, an action that will soon lead to deployment of millions, if not billions,[5] of unidentifiable radiating devices in the band operating at levels that the record shows will destroy our members' ability to use their existing facilities.[6]

[5] The 2018 Notice of Proposed Rulemaking explains the "explosive demand for unlicensed spectrum" due to the rapid development of innovation. *Unlicensed Use of the 6 GHz Band*, GN Docket No. 17-183, Notice of Proposed Rulemaking, FCC 18-147 at ¶ 3-7 (Oct. 24, 2018) (*NPRM*). As acknowledged in the *NPRM*, the expansion of unlicensed Wi-Fi routers provides the backbone for this development, and the Commission notes that the foundation is in progress: globally, the number of Wi-Fi hotspots is expected to grow six-fold by 2021—with more than 200 million expected in North America alone. Predictions indicate that between 2016 and 2022 the data traffic generated by smartphones will increase by a factor of six, and the growth of the Internet of Things ("IoT") will provide more than one billion low-cost home devices in the U.S. by 2023. The *NPRM* further acknowledges that IoT innovation in particular could be even greater than some expectations, as Ericsson estimates that there will be more than 15 billion short-range IoT devices by 2022 that will be designed to use unlicensed standards. *Id.*

[6] Roberson & Associates, LLC, *Impact of Proposed Wi-Fi Operations on Microwave Links at 6 GHz* (2019) (*CII User Study*) and Letter from EEI, AGA, APPA, AWWA, NRECA, NEI and UTC to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Mar. 20, 2020) (*Updated Technical Analysis*) (both studies demonstrating that indoor deployment without AFC will degrade 93% of licensed microwave point-to-point victim receivers in Houston in excess of the -6 dB I/N limit). *See also* Letter from Southern Company Services, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Feb. 6, 2020) and attached technical analysis (Lockard & White, "FCC 6 GHz NPRM Analysis for Southern Company Services," Jan. 31, 2020) (demonstrating that low power indoor devices without AFC will significant impact Southern's microwave links, even in a rural, non-urban setting); Letter from Fixed Wireless Communications Coalition, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Sept. 3, 2019) and attached technical analysis (George Kizer, "Overview of ECC Report 302: Sharing and Compatibility Studies Related to Wireless Access Systems Including Radio Local Area Networks (WAS/RLAN) in the Frequency Band 5925-6425 MHz," Sept. 3, 2019) (evaluating three studies to conclude that low power indoor RLAN transmitters can cause interference into fixed receiver unless controlled by AFC management); Letter from National Association of Broadcasters, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Dec. 5, 2019) and attached technical analysis (Alion, "Analysis of Interference to Electronic News Gathering Receivers from Proposed 6 GHz RLAN Transmitters," Oct. 2019) (demonstrating that indoor devices present a significant risk of harm to electronic newsgathering licensed use); See Letter from AT&T, to Marlene H. Dortch, Secretary, FCC

This unprecedented decision ignored our detailed real-world technical studies, dismissed our concerns about the cognizable risk to critical infrastructure and public safety operations, improperly relied upon unrealistic and unverified theoretical simulations, and was not supported by even a single actual field test to evaluate the impact this unprecedented influx of unlicensed indoor devices will have on incumbent links.

The result is that the new rules permitting unlicensed indoor use without any interference mitigation mechanism will make our members' existing mission-critical wireless systems that operate in the 6 GHz band unreliable and inoperable. Electric companies' mission-critical operations simply cannot be conducted on spectrum that does not ensure appropriate levels of security and reliability.[7] Uncontrolled interference from the indefinite numbers of consumer wireless devices that the *Order* would facilitate will jeopardize EEI members' ability to operate teleprotection systems properly, to communicate internally and with first responders, and will thereby put lives and property at risk.

EEI has made it very clear in its submissions that its members are not opposed to shared use of the 6 GHz band.[8] In doing so, EEI reiterated that shared use of the 6 GHz band with

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Docket Nos. 18-295, 17-183 (Nov. 12, 2019) and attached technical analysis (AT&T, "Radio Local Area Network (RLAN) to Fixed Service (FS) Microwave Interference in the 6 GHz Band," Nov. 12, 2019) (demonstrating a significant impact of harmful interference to fixed service links from indoor low power and very low power devices); Letter from CTIA, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Jan. 24, 2020) and attached technical analysis (CTIA, "6 GHz Interference Analysis," Jan. 2020) and Letter from CTIA, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Apr. 3, 2020) and attached technical analysis (CTIA, "CTIA's Interference Calculation Parameters and a Response to RLAN Stakeholders," Apr. 2020) (evaluating numerous cases pulled from the 25 entries in a ULS 6 GHz license search to show a high probability that a single low power indoor device will cause harmful interference).

[7] *See* Declaration of Michael V. Kuberski on behalf of Exelon Corporation at 2 (attached hereto as Attachment A); Declaration of Coy Trosclair on behalf of Southern Company at 2-5 (attached hereto as Attachment B).

[8] Letter from EEI, AGA, APPA, AWWA, NRECA, NEI, and UTC to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (April 15, 2020); Letter from EEI, AAR, AGA, API, APPA, CCA, CTIA, EPSA, IAFC, NARUC, NEI, NPSTC, NRECA, and UTC to Marlene H. Dortch, Secretary, FCC Docket

unlicensed devices must ensure that our members' existing 6 GHz systems can operate as designed in the middle of emergencies and natural disasters without interruption. EEI emphasized that in order to maintain the level of reliability that its members' operations require, any and all permitted use must include mechanisms for identification of harmful interference and provide a timely and effective means to mitigate the risk of disruption. The Commission's *Order* failed to address those concerns.

As EEI will demonstrate to the Court of Appeals, the Commission's unprecedented action to permit indoor use of unlicensed devices without any protection against harmful interference or process to mitigate such interference is contrary to law, specifically Sections 301 and 316 of the Communications Act. It also is arbitrary because it relies on unsupported hypotheses rather than actual testing for potential harmful interference caused by indoor unlicensed devices and because it fails to provide any meaningful device identification or harm mitigation mechanism to protect incumbent electric company 6 GHz links. While EEI and others make their arguments to the Court of Appeals, and while the Court adjudicates those arguments, the Commission should stay its rules to prevent immediate and unnecessary harm to our members' wireless networks.

Nos. 18-295, 17-183 (April 15, 2020); Letter from EEI and UTC to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Mar. 30, 2020); Letter from EEI to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Mar. 30, 2020); Letter from EEI, NRECA, AGA, UTC, APPA, NEI and AWWA to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Feb. 7, 2020); Letter from EEI, UTC and APPA to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Jan. 24, 2020); Letter from EEI to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Dec. 11, 2019); Letter from EEI, UTC, AGA, API, AWWA, AAR, APPA, IAFC, GWTCA, NRECA, NEI and 58 other individual industry stakeholders to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Nov. 18, 2019); Letter from EEI, UTC, NRECA, APPA, and AWWA to Marlene H. Dortch, Secretary, FCC Docket Nos. 18- 295, 17-183 (May. 17, 2020); EEI, UTC, NRECA, APPA, API and AWWA Reply Comments, FCC Docket Nos. 18-295, 17-183 (Mar. 18, 2019); EEI, UTC, NRECA, APPA, API and AWWA Comments, FCC Docket Nos. 18- 295, 17-183 (Feb. 15, 2019).

DISCUSSION

In determining whether to stay the effectiveness of one of its orders, the Commission applies the four-factor test developed by the courts. A petitioner must show that: (1) it is likely to prevail on the merits; (2) it will suffer irreparable harm if a stay is not granted; (3) other interested parties will not be substantially harmed if the stay is granted; and (4) the public interest favors granting a stay.[9] Extraordinary equitable relief of a stay is intended for extraordinary cases like this, where the circumstances make it practically "impossible . . . to compel a return to the status quo."[10] As shown below, all such factors are present here warranting the issuance of a stay.

A. EEI Will Prevail on the Merits at the Court of Appeals.

1. *The Commission's Action to Permit New Unlicensed Indoor 6 GHz Operations that Interfere with Incumbent Providers' Licensed Uses Conflicts with the Commission's Fundamental Obligation to Protect Licensed Users from Harmful Interference and is Barred by the Communications Act, the Commission's Rules, and Applicable Precedent.*

Protecting incumbent licensed users from harmful interference has been the cornerstone of the Communications Act since its enactment in 1934. Section 301 of the Communications Act grants and prescribes the Commission's authority governing the public uses of the radio spectrum and includes an affirmative obligation that the Commission protect licensed users against harmful interference from unlicensed operations in the United States.[11] Section 301

[9] *See Protecting the Privacy of Customers of Broadband and Other Telecommunications Services*, WC Docket No. 16-106, Order Granting Stay Petition in Part, FCC 17-19 (rel. Mar. 1, 2017) (citing *Washington Metro. Area Transit Comm'n v. Holiday Tours, Inc*., 559 F.2d 841, 843 (D.C. Cir. 1977); *Virginia Petroleum Jobbers Ass'n v. Federal Power Comm'n*, 259 F.2d 921, 925 (D.C. Cir. 1958)).

[10] *F.T.C. v. Exxon Corp.*, 636 F.2d 1336, 1342 (D.C. Cir. 1980); *see also Consol. Gold Fields PLC v. Minorco, S.A.*, 871 F.2d 252, 261 (2d Cir. 1989), *amended*, 890 F.2d 569 (2d Cir. 1989).

[11] 47 U.S.C. § 301; 47 C.F.R. § 15.5(b)-(c).

requires that "[n]o person shall use or operate any apparatus for the transmission of energy or communications or signals by radio . . . except under and in accordance with this Act and with a license in that behalf granted under the provisions of this Act."[12] Congress thus tasked the Commission with addressing the problem of interference between competing uses of spectrum, and the Commission's core obligation in this regard is to ensure that unlicensed transmitting devices do not cause harmful interference to licensed operations.[13]

The Commission has acknowledged that this provision requires it to "establish regulations necessary to prevent harmful interference to the authorized radio services"[14] and provides the Commission with the requisite authority "to prohibit the use of equipment or apparatus which causes interference to radio communications and, under 303(f)[,] to prescribe regulations to prevent interference between stations."[15] Additionally, Section 302 directs the Commission to apply its technical standards to device manufacturers, instructing the Commission to promulgate regulations governing the interference potential of devices that are capable of causing "harmful interference" to radio communications.[16]

The Commission's Part 15 rules for unlicensed operations reflect this fundamental obligation imposed by Congress to protect licensed operations from harmful interference caused by unlicensed use. Part 15 defines "harmful interference" as "[a]ny emission, radiation or

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[12] 47 U.S.C. § 301.

[13] *See, e.g., F.C.C. v. Sanders Bros. Radio Station*, 309 U.S. 470, 474 (1940).

[14] *Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices without an Individual License*, Notice of Proposed Rulemaking, 2 FCC Rcd 6135, 6166 n.16 (1987).

[15] *Commission Staff Clarifies FCC's Role Regarding Radio Interference Matters and Its Rules Governing Customer Antennas and Other Unlicensed Equipment*, Public Notice, 19 FCC Rcd 11300, 11301 (OET 2004), *citing* S. Rep. No. 1276, 90th Cong., 2d Sess. 1968, 1968 U.S.C.C.A.N. 2486; *see also* 47 U.S.C. §§ 301, 303(f).

[16] 47 U.S.C. § 302.

induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunications service."[17] Further, the rules require that each unlicensed device "shall be required to cease operating . . . upon notification by a Commission representative that the device is causing harmful interference" and "shall not resume until the condition causing the harmful interference has been corrected."[18]

The D.C. Circuit has held that these rules describe "an *ex post* requirement that a device 'cease' operation if 'harmful interference' occurs."[19] This is not a predictive requirement; if a device is actually causing harmful interference, there is a positive legal obligation on the Commission and the device user to end the harmful interference.

The 5 dBm/MHz PSD threshold set for indoor unlicensed use is purportedly the sole parameter the Commission deems necessary to prevent harmful interference. The *Order* is not only void of any basis for the Commission's adoption of this arbitrary threshold,[20] but the record alarmingly demonstrates that some interference will occur at a majority of locations where unlicensed devices are used indoors, and indeed some locations will receive harmful interference that will impair licensed uses.[21] In the *Order*, the Commission discounted the significance of potential injury to licensees by rejecting this extensive real-world simulation evidence demonstrating a high probability of harm from unlicensed indoor devices. Rather, it relied on a

[17] 47 C.F.R. § 15.5(m).

[18] 47 C.F.R. § 15.5(c).

[19] *Am. Radio Relay League, Inc. v. F.C.C.*, 524 F.3d 227, 231 (D.C. Cir. 2008).

[20] As AT&T identified, the Monte Carlo simulation discussed in the *Order*, indeed the sole projection relied upon by the Commission, did not assess this parameter or whether contention-based protocols were needed even at lower power outputs. Letter from AT&T to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (April. 16, 2020).

[21] *See supra* note 6.

single probability assessment speculating as to the prevalence and use of unlicensed indoor devices based upon technical assumptions forwarded by entities that want to sell devices that would operate unlicensed and that contradict its own statements touting the imminent impact of the 5G revolution.[22]

To resolve the problem, the Commission could have authorized indoor unlicensed use with an AFC mechanism, thereby balancing the objective of increasing access to devices and the statutory obligation to protect incumbent users, but it did not. Instead, by conducting a limited and dismissive assessment of ample technical analyses identifying the need for mitigation mechanisms to prevent harmful interference from indoor unlicensed devices, the Commission failed to take the "hard look" required by law as the expert authority on shared spectrum systems.[23]

Even if the Commission's determination that the interference resulting from indoor unlicensed use will not rise to the "harmful interference" threshold could be supported by the threadbare justification in the *Order*, a blanket authorization for unlicensed indoor devices without any AFC system in place fails to meet the requirements set forth under Section 301 and the Commission's own rules. Instead of providing a mechanism to identify and prevent harmful interference, either before or after it is detected, the Commission asserts that all interference

[22] *See supra* note 5. *See also* Statement of Commissioner Michael O'Reilly, attached to *NPRM* at 50 (quoting the Cisco VNI Forecast, which noted that total Internet traffic is expected to triple from 2016 to 2021, of which 52% of this traffic is expected to be carried by wireless connections).

[23] *Loyola University v. F.C.C.*, 670 F.2d 1222, 1227 (D.C. Cir. 1982). Moreover, the Commission's cursory dismissal of the likely interference contravenes the policy of the United States "that any physical or virtual disruption of the operation of the critical infrastructures of the United States be rare, brief, geographically limited in effect, manageable, and minimally detrimental to the economy, human and government services, and national security of the United States[.]" 42 U.S.C. § 5195c(c)(1). As EEI has made clear to the Commission, its members' operations, and those of other affected licensees, are crucial to critical infrastructure, emergency responses, and therefore national security.

caused by indoor devices is not significant enough to really be harmful, yet there is no technical assessment in the record supporting this assertion. Even if licensed users can rapidly prove that harmful interference from unlicensed indoor devices is occurring, under the Commission's *Order* there would be no records of unlicensed indoor device activity—time and location—needed to identify the operator or location of an unlicensed indoor device violating the "no harmful interference" rule.[24]

The *Order* thus creates blanket immunity for unlicensed indoor devices without any actual mechanism to identify interfering devices and their location, much less a way to instruct users of harming devices to "cease" operations. Because there is no practical *ex post* remedy for harmful interference, the *Order*'s approach not only flaunts Section 301's requirements, it ignores the Commission's own established legal standard, which courts have recognized to be fatal on appeal.[25]

[24] Aside from the inappropriate burden shifting the Commission places on licensed incumbents to detect, trace back, and report interfering devices, the infrastructure of incumbent's existing fixed links makes it impossible as licensed users have no mechanism to identify the source of harmful interference. Fixed point-to-point microwave links are not engineered to triangulate on potential sources of interference, and because there are naturally occurring periods of fade, microwave licensees will only be able to identify harmful interference as a statistical phenomenon manifested over time.

[25] *See Achernar Broad Co. v. F.C.C.*, 62 F.3d 1441, 1447 (D.C. Cir. 1995) ("The Commission's failure to follow the clear dictate of its own rule . . . violates the rudimentary principle that agencies are bound to adhere to their own rules and procedures.") (citing *Teleprompter Cable Comm. Corp. v. F.C.C.*, 565 F.2d 736, 742 (D.C. Cir. 1977)); *Way of Life Television Network, Inc. v. F.C.C.*, 593 F.2d 1356, 1359 (D.C. Cir. 1979) ("It is a 'well-settled rule that an agency's failure to follow its own regulations is fatal to the deviant action.'") (quoting *Union of Concerned Scientists v. Atomic Energy Comm'n*, 499 F.2d, 1069, 1082 (D.C. Cir. 1974)); *Reuters, Ltd. v. F.C.C.*, 781 F.2d 946, 950 (D.C. Cir. 1986) ("[I]t is elementary that an agency must adhere to its own rules and regulations.").

2. *The Commission's Action to Permit Unlicensed Devices Without a Process for Interference Mitigation Impermissibly Modifies Incumbents Licenses Under the Communications Act and Applicable Precedent.*

Reliability in an emergency, with technically perfect response times measured in milliseconds, is the key characteristic of our members' 6 GHz wireless facilities. Without protection from harmful interference or, at the bare minimum, providing a process by which incumbent licensees could track and trace an offending unlicensed device to mitigate harm, the existing licenses held by our members in the 6 GHz band become unreliable and thus unusable, eviscerating the key value of their operation and amounting to an impermissible modification under Section 316 of the Communications Act and applicable precedent.[26]

Pursuant to Section 316, the Commission is authorized to modify an existing license only under very limited and specific circumstances. "A broadcasting license is a thing of value to the person to whom it is issued and a business conducted under it may be the subject of injury."[27] For this reason,

> the Supreme Court has ruled that modification (within the meaning of that word as used in the section quoted) of an outstanding license may occur not only directly, by virtue of literal change of its terms, but also indirectly, through extension to another station of broadcasting facilities which will cause interference to the outstanding station within its lawfully protected contour[.][28]

Recognizing the potential disruption inherent in modifying an existing license, the Act requires that the Commission provide notice and an opportunity to be heard to the affected license-holders.[29] The Supreme Court has further held that when the Act permits "modification," this

[26] 47 U.S.C. § 302.

[27] *L.B. Wilson, Inc. v. F.C.C.*, 170 F.2d 793, 798 (D.C. Cir. 1948).

[28] *Id.* at 799.

[29] *See* 47 U.S.C. § 316.

term "connotes *moderate* change."[30] Examples of allowable modifications upheld under Section 316 include the orders that "require[ed] mobile-data providers to offer roaming agreements to other such providers on 'commercially reasonable' terms";[31] provided broadcasters additional channels to facilitate the transition to digital broadcasting;[32] and required that a licensee shift to a different channel.[33] In each of these examples, the fundamental nature of the licensee's use of its license remained the same; they could provide "essentially the same service."[34]

Given the accepted scope of the term "modification" under Section 316, the *Order* cannot stand, as it fundamentally changes the nature of the incumbents' licenses, rendering them effectively worthless to critical infrastructure users. As discussed above, there is substantial evidence that the *Order* will result in extensive, unpredictable interference with the incumbents' use of their licensed spectrum. This is far from the "moderate change" envisioned by the term "modification."[35] EEI members dependent on 6 GHz licenses will not be able to provide "essentially the same service," because that service will be subject to interference that challenges the reliability of the operations that depend on fixed antennae communications and for which there is no recourse. Rather than an allowable modification, the *Order* represents what is functionally a revocation of existing licenses without compensation.

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[30] *See MCI Telecommunications Corp. v. Am. Tel. & Tel. Co.*, 512 U.S. 218, 228 (1994) (emphasis added); *Cellco Partnership v. F.C.C.*, 700 F.3d 534, 543-44 (D.C. Cir. 2012) (applying *MCI* to 47 U.S.C. § 316 and holding that "modification" does not mean the Commission can fundamentally change a license); *Community Television, Inc. v. F.C.C.*, 216 F.3d 1133, 1140–41 (2000) (same).

[31] *Cellco*, 700 F.3d at 537.

[32] *Community Television*, 216 F.3d at 1141.

[33] *Peoples Broadcasting Co. v. United States*, 209 F.2d 286, 287 (D.C. Cir. 1953).

[34] *Community Television*, 216 F.3d at 1141.

[35] *MCI*, 512 U.S. at 228.

Perhaps in recognition of this, the Commission has not invoked Section 316. But this failure only further underscores the disruptive nature of the *Order* and the Commission's unlawful decision-making.

3. *The Commission's Action to Permit New Unlicensed Indoor 6 GHz Operations that Interfere with Incumbent Providers' Licensed Uses Was Arbitrary and Capricious in Violation of Section 706 of the Administrative Procedure Act and Applicable Precedent.*

Even if the Court were to find that the Commission's action is consistent with Sections 301 and 316 of the Communications Act, it would still reverse the action as arbitrary and capricious in violation of Section 706 of the Administrative Procedure Act ("APA"), and it would do so for several reasons.[36]

Foremost, it arbitrarily contradicts the explicitly stated policy of the United States in 42 U.S.C. § 5195c(c)(1) "that any physical or virtual disruption of the operation of the critical infrastructures of the United States be rare, brief, geographically limited in effect, manageable, and minimally detrimental to the economy, human and government services, and national security of the United States[.]"[37] As incumbents demonstrated in this proceeding, nothing about the disruption resulting from the deployment of millions of new low power indoor devices will be rare, brief, geographically limited in effect, manageable or minimally detrimental.

If anything, this 42 U.S.C. § 5195c(c)(1) directive means that the Commission cannot equally balance the competing interests and arguments of unlicensed use proponents and critical infrastructure incumbents as if they were equal commercial use claimants to the spectrum. Priority must be given to existing critical infrastructure uses and not holiday sales of wireless

[36] 5 U.S.C. § 706(2)(A) (Instructing courts reviewing challenged agency regulation to invalidate any agency action found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.")

[37] 42 U.S.C. § 5195c(c)(1).

consumer devices. Proponents of unlicensed use should have faced a high burden to show that the interference caused by their devices will not be harmful to incumbents. Instead, however, the Commission has ignored the 42 U.S.C. § 5195c(c)(1) directive altogether by proposing unlicensed use of the band and then requiring critical infrastructure incumbents to prove that the proposed new use would cause harmful interference beyond all theoretical doubt, and dismissing all of critical infrastructure's other aligned opponents' good faith studies showing the likelihood of harmful interference as not one bit credible. Instead, the Commission has discounted the protection of critical infrastructure incumbents and their mission-critical operations in favor of rushing through untested rules benefitting the commercial interests of technology and consumer electronics companies. That was arbitrary and capricious in violation of Section 706 of the APA.

And for other reasons described in more detail throughout this Petition, the Court of Appeals will additionally find the new rules arbitrary and capricious in violation of Section 706: (1) the new rules for the sharing of the 6 GHz band by authorizing unlicensed indoor low power devices arbitrarily do not provide any AFC system or other pre-deployment coordination mechanism, an action that will soon lead to deployment of millions, if not billions, of unidentifiable radiating devices in the band operating at level that the record shows will destroy incumbent licensed users ability to use their existing facilities; (2) the adoption of the new rules ignored incumbent users detailed real-world technical studies, and arbitrarily dismissed our concerns about the very real risk to critical infrastructure and public safety operations; (3) the adoption of the new rules arbitrarily relied upon unrealistic and unverified theoretical simulations; (4) before adopting the new rules, the Commission arbitrarily failed to conduct even a single actual field test to evaluate the actual, not theoretical, impact this influx of unlicensed indoor devices will have on incumbent operations; (5) by permitting unlicensed indoor use

without any device identification and/or interference mitigation mechanism, the new rules make our members' existing mission-critical wireless systems unreliable and inoperable, jeopardizing their ability to operate teleprotection systems properly, to communicate internally and with first responders, and will put lives and property at risk; and (6) the Commission authorized unlicensed use regardless of the impact on public safety, arbitrarily abdicating its obligation to conduct reasoned decision making on the record. All of this was arbitrary and capricious in violation of Section 706.[38]

B. EEI Members Will Suffer Immediate Irreparable Harm Absent a Stay.

Our electric company members with legacy 6 GHz communications networks will suffer immediate and irreparable harm should the new rules allowing unlicensed indoor low power operations go into effect. All signs point to the upcoming deployment of low power devices being dramatic and comprehensive. The record is replete with statements from Wi-Fi interests that the consumer electronics manufacturers are primed to inundate the market with low power indoor devices during the upcoming 2020 holiday season.[39] Unlicensed use proponents' own

[38] *See, e.g., Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 52 (1983). Courts will find an action to be arbitrary and capricious where the agency "entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Id.* at 43. Further, the agency's fact finding, must be supported by "substantial evidence," 5 U.S.C. § 706(2)(E), and cannot be based on "cherry-picked" evidence that ignores the evidentiary record. *See Am. Radio*, 524 F.3d at 237.

[39] Most recently Opposition to UWBA Request (NETGEAR), FCC Docket Nos. 18-295, 17-183 (June 15, 2020) states that "Delays of 30 days can severely impede development and would cause uncertainty for product markets. Ultimately, a delay of 30 days for products to reach market can result in millions of dollars in revenue lost". Apple et al noted in their letter to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (April 3, 2020) that "finalizing rules soon will allow companies to manufacture and certify devices quickly and ship products to consumers by the end of this year." Additionally, the Wi-Fi Alliance letter to Marlene H. Dortch, Secretary, FCC Docket Nos 18-295, 17-183 (Jan. 17, 2020) states that in order to guarantee "availability of Wi-Fi 6E enabled products for the commercially important 2020 holiday season … regulatory action is needed soon."

predictions suggest an explosion everywhere of probably hundreds of million, if not billions of low-power devices.[40] The *Order* treats all this as some sort of public benefit, ignoring the potentially devastating impact if electric grids experience harmful interference during the current public health crisis or a future emergency.

This upcoming deployment is not as innocuous as the Commission's *Order* suggests. Several studies in the record, all briefly dismissed by the *Order*, demonstrate that even one device operating at less than the currently authorized 5 dBm/MHz level could cripple a member's licensed 6 GHz fixed link.[41] These studies also show that the interference interruption additively grows should new unlicensed devices end up in in the same location.[42] That harmful interference will occur is indisputable, that the harm will be irreparable is inherent in the complete lack of a corrective mechanism.

Members Exelon and Southern Company each provide the attached declarations describing the immediate risk posed by unlicensed indoor devices being deployed in their service

[40] *See, e.g.*, Letter from Apple et al, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Feb. 11, 2020) ("[B]y 2022 Wi-Fi will carry 57 percent of U.S. Internet traffic … and 71 percent of global 5G mobile traffic will be offloaded to Wi-Fi … Unlicensed technologies … are expected to contribute more than $834 billion this year."); Letter from Apple et al, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Nov. 5, 2019) (noting that there are now "13 billion devices worldwide" and it has been "more than twenty years since new mid-band spectrum was made available for Wi-Fi" which suggests that adding 1200MHz (6GHz unlicensed) to the existing 580MHz of Wi-Fi will attract a large share of the products (already at 13B) to the new spectrum);. Letter from Apple et al, to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (Oct. 25, 2019) (stating that "[t]he contributions to Wi-Fi 6 networks have already begun … US Companies Broadcom, Intel, Marvell, and Qualcomm being among the first with Wi-Fi 6 Certified products"). Broadcom announced their first Wi-Fi 6E chipset (for 6GHz capability) on February 13, 2020 for integration/testing with volume shipments fall 2020.

[41] Letter from Southern to Marlene H. Dortch, Secretary, FCC Docket Nos. 18-295, 17-183 (February 27, 2020). Attachments B, C, and D each show this analysis on page 10, Table 8 with 18 of 30 total locations analyzed exceeding -6dB I/N level specified by ITU for interference.

[42] See *id.* at Attachment A page 7 paragraph 3.2.1 and Attachments B, C, and D (each in Section 3 and 4, pages 8 through 10).

territories.[43] As all of these devices will be without any identification mechanism as to owner/user or geographic location identification, there is absolutely no means for a utility to reach out to even a single user, to mitigate the interference, or even to recall or turn off an offending device. There is also no other alternative spectrum for the incumbent licensees to move to as there is no band currently available with the bandwidth, distance propagation or signal quality characteristics to achieve the minimum reliability standards required by our members for reliable operation of their networks.

The direct and consequential damage from widespread deployment of unlicensed indoor low power devices without AFC, with many millions of unregistered devices operating on an unlicensed and geographically unlimited and unidentifiable basis, cannot be undone once deployed. With millions of devices soon deploying in haphazard, unpredictable places and densities, without meaningful device identification, and without any means to recall or retrofit devices individually or collectively causing harm, the coming deployment will very quickly risk overwhelming our members' networks both generally and, at any time, in any particular location. If local utilities' 6 GHz links are compromised, electric reliability will be compromised, potentially harming national economic wellbeing and security. Given the stakes, the harm to our members should the rule go into effect is both immediate and irreparable.

As emphasized previously, this stay request is limited to this immediate threat of the new rules of permitting low power indoor use without AFC, and very intentionally does not cover other aspects of the new rules that are not yet final. As the harm posed by this final action is separate and cognizable from other, non-final portions of the *Order*, we are requesting only that

[43] *See* Declaration of Michael V. Kuberski on behalf of Exelon Corporation at 2 (attached hereto as Attachment A); Declaration of Coy Trosclair on behalf of Southern Company at 2-5 (attached hereto as Attachment B).

the stay be issued with regard to indoor low power devices, and despite the fact that other portions of the *Order* may not be final agency actions.

C. Other Parties Will Not Suffer Immediate Harm If the Stay Is Not Granted.

Granting the stay would mean maintaining the status quo just until the Court of Appeals for the D.C. Circuit can hear the pending appeals and render its judgment as to the *Order*'s legality. Should the Court determine that the *Order* was illegal, opposing parties will not be harmed because they will simply have been blocked from deploying devices found to be contrary to law and the public interest. Should the *Order*'s legality be upheld, certain business plans to deploy unlicensed devices may be delayed, but none will be destroyed. By contrast, if the rules go into effect and devices are certified and deployed, our member electric companies will see their 6 GHz networks permanently compromised regardless of the ultimate legality of the Commission's action.

D. The Equities and Public Interest Favor a Stay.

For much the same reasons, the equities and public interest strongly favor a stay. Once unlicensed 6 GHz devices are deployed later this year, the risk to incumbent 6 GHz links will be immediate. Because there is no limit to where a consumer could use such a device, no way to track the location of any one device once deployed, and no way to pinpoint the precise location where harmful interference is actually emanating from, there is a very real and dangerous possibility that any and all links nationwide will be immediately compromised. If the local utility cannot rely on its communications infrastructure because it practically cannot identify and

mitigate interference, lives and property will be at risk.[44] Taking that risk is not in the public interest and can be avoided by the FCC by granting this stay while the legality of the *Order* is assessed by the courts. The public interest demands the Commission instead stay the rules pending judicial review.

[44] This is precisely why it is a national policy to protect such critical infrastructure. 42 U.S.C. § 5195c(b)(3) (finding, *inter alia*, "A continuous national effort is required to ensure the reliable provision of cyber and physical infrastructure services critical to maintaining the national defense, continuity of government, economic prosperity, and quality of life in the United States.").

CONCLUSION

The Commission should grant a stay of the *Order* pending judicial review.

Respectfully submitted,

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Counsel for Edison Electric Institute

Dated: June 19, 2020

ATTACHMENT A

DECLARATION OF MICHAEL V. KUBERSKI ON BEHALF OF EXELON CORPORATION IN SUPPORT OF PETITIONER EDISON ELECTRIC INSTITUTE'S PETITION FOR STAY PENDING JUDICIAL REVIEW

I, Michael V. Kuberski hereby declare as follows:

1. I am the Director of Utility Communications of Exelon Corporation. I am of legal age, mentally competent to provide this Declaration, and offer it voluntarily. I have personal knowledge of the facts set forth herein and, if called as a witness, I could and would testify competently to such facts.

2. Exelon is a leader in all phases of bringing energy to American consumers. Its operations include power generation, competitive energy sales, transmission and delivery. Exelon has operations and business activities in 48 states and the District of Columbia. Exelon's six transmission and distribution utilities — Atlantic City Electric Company, Baltimore Gas and Electric Company, Commonwealth Edison Co., Delmarva Power & Light Company, PECO Energy Company and the Potomac Electric Power Company (the "Exelon Companies") — deliver electricity and natural gas to approximately 10 million customers in Delaware, the District of Columbia, Illinois, Maryland, New Jersey and Pennsylvania.

3. Exelon is one of the largest competitive U.S. power generators, with more than 31,000 megawatts of nuclear, gas, wind, solar and hydroelectric generating capacity comprising one of the nation's cleanest and lowest-cost power generation fleets. The company's Constellation business unit provides energy products and services to approximately 1.8 million residential, public sector and business customers, including more than two-thirds of the Fortune 100.

4. Exelon relies heavily on the 6 GHz band for point-to-point backhaul communications to support its critical infrastructure operations. The Exelon Companies hold more

than 200 licenses in the Part 101 6 GHz band. These licenses authorize links that backhaul communications for Supervisory Control and Data Acquisition ("SCADA"), telemetry, and teleprotection, which ensure safe, effective, and efficient operation of the power grid. These systems monitor and isolate power grid issues and are an integral part of maintaining reliability of electric utility critical infrastructure on a 24/7/365 basis.

5. The Exelon Companies have invested in the 6 GHz band specifically because of the reliable and exclusive nature of prior-coordinated Part 101 point-to-point licenses. The 6 GHz band is the backbone upon which critical services rely. Any impact to these systems has the potential to negatively affect the Exelon Companies' ability to provide reliable electric service to the public.

6. Interference to utility operated 6 GHz band microwave systems risks the functionality of carefully engineered field protection and control devices that ultimately ensure the delivery of energy to consumers. Exelon is particularly concerned with the Commission's decision to permit certain unlicensed devices to operate in the 6 GHz band without Automated Frequency Control ("AFC"). In that regard, Exelon commissioned a study by the engineering firm Lockard & White of the potential impact from unlicensed 6 GHz band Radio Local Area Network ("RLAN") devices to 6 GHz microwave links ("L&W Study").

7. The L&W Study concluded that Exelon's 6 GHz band fixed microwave links "had a high probability of being significantly impacted" by a small number of RLAN devices. The L&W Study found this to be true even if the unlicensed RLAN devices were low power indoor or very low power units. The L&W Study determined that an AFC designed to avoid RLAN units transmitting over channels that are in use by licensed transmitters must be mandated to avoid these issues.

8. It is clear that for there to be any practicable sharing between licensed and unlicensed systems in the 6 GHz band, there must be an AFC system by which unlicensed systems identify and avoid licensed 6 GHz links. The AFC must be thoroughly vetted by market testing under real-world conditions and such testing must be conducted by a multi-stakeholder group with representatives from all incumbent licensed stakeholders in the band. This is the absolute minimum required to ensure the protection of licensed 6 GHz systems.

9. By allowing indoor unlicensed devices to operate without any AFC at all, there will be an unacceptable level of risk for licensed 6 GHz systems. Although the Commission suggests that building attenuation will be instrumental in minimizing the potential for harmful interference from indoor low-power access points to licensees' receivers, even a cursory review of the mechanisms the Commission proposes to put in place to ensure indoor operation reveals them to be woefully inadequate.

10. For example, the Commission purports to ensure indoor operation by prohibiting weather resistant low power access point devices. However, aftermarket weather-proof enclosures currently are available from dozens of vendors. The Commission further prohibits low power unlicensed devices from operating on battery power, which would appear to have no practical impact given the outdoor availability of AC power supply. Exelon strongly fears the Commission is overestimating its ability to ensure indoor operation of non-AFC enabled devices, and thus underestimating the potential impact to critical licensed systems.

11. Not only does the lack of AFC unacceptably risk interference to licensed systems, it will also render enforcement unfeasible. In adopting an AFC requirement for outdoor unlicensed systems, the Commission acknowledges that centralized AFC will ensure the capability exists to identify sources of interference and expeditiously rectify such instances. With those

considerations in mind, the authorization of potentially millions of unlicensed devices in the 6 GHz band, without any tether to centrally identify and mitigate interference, risks harmful interference to Exelon's critical communications systems. Without AFC, there will be no "putting the genie back in the bottle" once unlicensed devices are released in the market.

I declare under penalty of perjury pursuant to 28 U.S.C. § 1746 that the foregoing is true and correct to the best of my knowledge and belief.

Executed on: June 18, 2020

Michael V. Kuberski

ATTACHMENT B

DECLARATION OF COY P. TROSCLAIR ON BEHALF OF SOUTHERN COMPANY SERVICES, INC. IN SUPPORT OF PETITIONER EDISON ELECTRIC INSTITUTE'S PETITION FOR STAY PENDING JUDICIAL REVIEW

I, Coy P. Trosclair hereby declare under penalty of perjury pursuant to 28 U.S.C. § 1746 as follows:

1. I am the Director of Telecom Services for Southern Company Services, Inc. ("SCS"). SCS is a wholly owned subsidiary service company of Southern Company, a holding company based in Atlanta, Georgia, which operates regulated electric and natural gas utilities serving 9 million customers in nine states (collectively, "Southern"). I have held this position since April 2017 and have been with Southern for more than 21 years. I make this declaration in support of a Petition for a Stay of the new rules adopted by the Federal Communications Commission ("FCC") permitting the unlicensed operation of low power indoor devices in the 6 GHz band. Southern is a member of the Edison Electric Institute ("EEI").

2. Southern uses a variety of communications technologies and services to support the safe and efficient generation, transmission, and distribution of energy services to their retail and wholesale customers. Southern holds about 175 licenses for point-to-point frequency paths in the 6 GHz band. Southern also holds about 1,000 licenses for point-to-point microwave facilities in the Fixed Service bands between 10.7 GHz and 19.7 GHz where shorter frequency paths can be accommodated.

3. However, because of Southern's extensive service area, and the need to communicate with facilities in very rural areas, the 6 GHz band is the only band that can accommodate Southern's bandwidth and performance requirements over very long paths.

4. Southern's fixed microwave facilities support a variety of utility applications, including voice and data communications between and among energy control centers, transmission and distribution substations, power generating stations, and the other utilities with which Southern must coordinate in real-time for management of the interconnected power grid. Microwave is also used to backhaul voice and data from land mobile radio systems used by field crews to coordinate the safe and efficient construction, maintenance, and restoration of Southern's electric facilities. Southern's wide-area land mobile system, operated by Southern Company's wholly owned subsidiary, Southern Communications Services, Inc. d/b/a Southern Linc, also provides commercial mobile radio service to state and local public safety agencies, school districts, rural local governments, public utilities, emergency responders, industrial users, and other commercial entities and individuals throughout the Southeast.

5. Any disruption to the communications links supporting utility applications can have serious consequences to utility operations. The inability to control grid functions and operations creates dangerous situations and potential damage to grid infrastructure and can result in outages and interruptions in the provision of electric service to the public. Many of these applications require very low latency – as low as 20 milliseconds or better – and very high reliability (availability) at a level of 99.999% or higher.

6. In its Report and Order dated April 23, 2020, the FCC adopted new rules permitting unlicensed operations in the 6 GHz band, including rules that would permit the operation of low power indoor devices without any form of automated frequency control or other measure to mitigate harmful interference to licensed incumbent 6 GHz microwave systems, such as those that support Southern's electric utility operations. However, Southern submitted detailed technical studies and analyses to the FCC showing that even a single co-channel low

power indoor unit operating under the technical parameters adopted by the FCC would have a high probability of causing harmful interference to Southern's licensed 6 GHz microwave systems, and several other parties submitted detailed studies that reached similar conclusions. These studies demonstrate that allowing unlicensed low power indoor operations to commence under the rules adopted on April 23, 2020 will result in harmful interference that will pose an immediate and significant risk to Southern's electric utility operations and result in irreparable harm.

7. Southern has identified certain areas of its operations that would be exposed to detrimental, irreparable harm by interference to its 6 GHz microwave system. Some examples are provided below in this declaration.

8. One area of operation where Southern utilizes 6 GHz microwave links is at generating facilities, where they are used for numerous purposes. One of these applications, for example, is remote or autonomous control of critical plant systems to manage loads and prevent outages or catastrophic damage to both the electrical grid and generating components when a generating facility is brought onto the grid or in the event of a fault either at the plant or elsewhere in the electric system. Another critical application at these sites is physical security, such as cameras and real-time intrusion detection. These applications require uninterrupted connectivity and must not incur even a second of outage time, since they require instantaneous response in both directions. Interference from unlicensed low power indoor operations in the 6 GHz band will disrupt these critical communications and significantly increase the risk of severe damage to the generating facility, the transmission grid, and to switching devices both inside and outside connected substations, which would result in power outages and endanger the safety of employees and of the public.

9. Southern also utilizes 6 GHz microwave links to support substation operations, which require a stable, highly reliable, and low latency connection for critical functions such as protective relaying, which must react within milliseconds in order to manage electric loads, prevent cascading faults, and prevent the damage or destruction of substation breakers, transmission and distribution lines, and downstream distribution facilities such as transformers. Microwave links are also used to connect the substations of Southern and of neighboring utilities to exchange real-time, critical information about the interconnected electric grid such as voltages, current loads, and phase, as well as real-time status information on breakers, line switches, and load capacities. This is to ensure that the grid does not become unstable or overloaded, which may lead to brownout or blackout conditions and damage to interconnecting tie points, switches, transmission lines and substations. Interference from unlicensed low power indoor operations in the 6 GHz band will disrupt these critical substation communications and significantly increase the risk of severe damage to the substation and to the transmission and distribution grid, which would result in power outages and endanger the safety of employees and of the public.

10. In addition, Southern utilizes 6 GHz microwave links to provide critical communications to its two Nuclear Emergency Response Centers/Joint Information Centers. These centers are critical in case of an abnormal event at a nuclear facility and are required to meet specific criteria set forth by the Nuclear Regulatory Commission. Any degradation in a 6 GHz microwave path serving these centers as a result of unlicensed low power indoor operations will hinder the response in addressing any emerging or ongoing problem, which would endanger the safety of the public.

11. Southern does not have any alternative to the 6 GHz band for many of its critical communications links. Because of Southern's extensive service area and the need to communicate with facilities in very rural areas, the 6 GHz band is best suited to accommodate Southern's bandwidth and performance requirements, and deploying fiber along these routes or relocating into an adjacent band is not economically or operationally feasible. Other frequency bands, such as 11 GHz or 18 GHz, do not offer the signal quality over the distances needed to achieve minimum, utility industry accepted, reliability standards. Migrating paths from 6 GHz up to other bands will require additional towers to be constructed and additional microwave paths to be installed to fill the gap between existing sites now connected by a 6 GHz path. In addition to the cost – which Southern has estimated to be over $20 million for its system alone – any relocation would be highly disruptive to operations, including but not limited to the impact of multi-day to multi-week outages while systems are being cut over to their new channel assignments, which in turn would disrupt Southern's core electric utility operations. Broadband, low-latency, land-based options such as commercial fiber are not readily available in the very rural areas that Southern's 6 GHz microwave links now serve, and building our own fiber connectivity is cost prohibitive given the investment per mile over the long distances covered by the 6 GHz paths.

12. As described above, allowing unlicensed low power indoor operations to commence under the rules adopted on April 23, 2020 will expose Southern's electric utility operations to immediate and significant risk that will result in irreparable harm to the public.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: June 18, 2020

Coy P. Trosclair

Coy P. Trosclair